

Management Summary

Legionella pneumophila removal of E.A.M Benelux shower module

General

Four filter modules coded shower head 1 to 4, were tested under test conditions which are based on the ASTM F838-5 at Vitens Laboratories, Leeuwarden, The Netherlands. Tests were performed at 29 January 2018; in order to determine the LOG reduction of the filter module for the bacteria *Legionella pneumophila*.

Used methods

First the filter module was flushed with 1 L filtered tap water, followed by a challenge of 1 L water with a minimum concentration of $1,0 \times 10^9$ *Legionella pneumophila* (serotype 9) per liter. An effluent sample was taken at the end of the challenge. The feed and effluent sample taken from the challenge test were analyzed by Vitens Laboratories, Leeuwarden, The Netherlands. Analysis of the samples was conducted within 24 hours after the testing. Detection and enumeration of the *Legionella pneumophila* (serotype 9) was done according to NEN 6265:2007.

Test results

The table below displays the results of the *Legionella pneumophila* challenge experiments, using the data from the analytical report of Vitens.

Filter	CFU / liter	LOG	LOG reduction
Influent	6,75 E+09	9,8	
Shower head 1	<10	<1	>8
Shower head 2	<10	<1	>8
Shower head 3	<10	<1	>8
Shower head 4	<10	<1	>8



Management Summary

LAAT WATER VOOR JE WERKEN

Management Summary

Legionella pneumophila removal of E.A.M Benelux shower module

General

Four filter modules of E.A.M. Benelux, the coded shower head 1 to 4, were tested under test conditions which are based on the ASTM F838-5 at Vitens Laboratories, Leeuwarden, The Netherlands. Tests were performed at 28 February 2018; in order determine the LOG reduction of the filter module for the bacteria *Legionella pneumophila*. These shower head were kept in Vitens Legionella safe for the last 30 days (date January 29, 2018) and are the same showers which been test on January 29, 2018.

Used methods

First, the filter module was flushed with 1 L filtered tap water, followed by a challenge of 1 L water with a minimum concentration of $1,0 \times 10^9$ *Legionella pneumophila* (serotype 9) per liter. An effluent sample was taken at the end of the challenge. The feed and effluent sample taken from the challenge test were analyzed by Vitens Laboratories, Leeuwarden, The Netherlands. Analysis of the samples was conducted within 24 hours after the testing. Detection and enumeration of the *Legionella pneumophila* (serotype 9) were done according to NEN 6265:2007.

Test results

The table below displays the results of the *Legionella pneumophila* challenge experiments, using the data from the analytical report of Vitens.

Filter	CFU / liter	LOG	LOG reduction
Influent	1,57 E+10	10.2	
Shower head 1	<10	<1	>9
Shower head 2	<10	<1	>9
Shower head 3	<10	<1	>9
Shower head 4	<10	<1	>9

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Legionella pneumophila removal of E.A.M Benelux shower module

General

Four filter modules of E.A.M. Benelux, coded shower head 1 to 4, were tested under test conditions which are based on the ASTM F838-5 at Vitens Laboratories, Leeuwarden, The Netherlands. Tests were performed on 30 March 2018; in order to determine the LOG reduction of the filter module for the bacteria *Legionella pneumophila*. The same filters were used in tests performed on 29 January and 28 February 2018.

Used methods

First the filter module was flushed with 1 L filtered tap water, followed by a challenge of 1 L water with a minimum concentration of $1,0 \times 10^9$ *Legionella pneumophila* (serotype 9) per liter. An effluent sample was taken at the end of the challenge. The feed and effluent sample taken from the challenge test were analyzed by Vitens Laboratories, Leeuwarden, The Netherlands. Analysis of the samples was conducted within 24 hours after the testing. Detection and enumeration of the *Legionella pneumophila* (serotype 9) was done according to NEN 6265:2007.

Test results

The table below displays the results of the *Legionella pneumophila* challenge experiments, using the data from the analytical report of Vitens.

Filter	CFU / liter	LOG	LOG reduction
Influent	1,52 E+10	10.18	
Shower head 1	<10	<1	>9
Shower head 2	<10	<1	>9
Shower head 3	<10	<1	>9
Shower head 4	<10	<1	>9

Management Summary

Legionella pneumophila removal of E.A.M Benelux shower module

General

Four filter modules of E.A.M. Benelux, coded shower head 1 to 4, were tested under test conditions which are based on the ASTM F838-5 at Vitens Laboratories, Leeuwarden, The Netherlands. Tests were performed on 30 April 2018; in order to determine the LOG reduction of the filter module for the bacteria *Legionella pneumophila*. The same filters were used in tests performed on 29 January, 28 February and 30 March 2018.

Used methods

First the filter module was flushed with 1 L filtered tap water, followed by a challenge of 1 L water with a minimum concentration of $1,0 \times 10^9$ *Legionella pneumophila* (serotype 9) per liter. An effluent sample was taken at the end of the challenge. The feed and effluent sample taken from the challenge test were analyzed by Vitens Laboratories, Leeuwarden, The Netherlands. Analysis of the samples was conducted within 24 hours after the testing. Detection and enumeration of the *Legionella pneumophila* (serotype 9) was done according to NEN 6265:2007.

Test results

The table below displays the results of the *Legionella pneumophila* challenge experiments, using the data from the analytical report of Vitens.

Filter	CFU / liter	LOG	LOG reduction
Influent	4,40E+10	10.64	
Shower head 1	<10	<1	>9
Shower head 2	<10	<1	>9
Shower head 3	<10	<1	>9
Shower head 4	<10	<1	>9

Management Summary

Legionella pneumophila removal of E.A.M Benelux shower module

General

Four filter modules of E.A.M. Benelux, coded shower head 1 to 4, were tested under test conditions which are based on the ASTM F838-5 at Vitens Laboratories, Leeuwarden, The Netherlands. Tests were performed on June 28th 2018; in order determine the LOG reduction of the filter module for the bacteria *Legionella pneumophila*. The same filters were used in test performed on 29 January, 28 February 30 March, April 30 and 28 June 2018.

Used methods

First the filter module was flushed with 1 L filtered tap water, followed by a challenge of 1 L water with a minimum concentration of $1,0 \times 10^9$ *Legionella pneumophila* (serotype 9) per liter. An effluent sample was taken at the end of the challenge. The feed and effluent sample taken from the challenge test were analyzed by Vitens Laboratories, Leeuwarden, The Netherlands. Analysis of the samples was conducted within 24 hours after the testing. Detection and enumeration of the *Legionella pneumophila* (serotype 9) was done according to NEN 6265:2007.

Test results

The table below displays the results of the *Legionella pneumophila* challenge experiments, using the data from the analytical report of Vitens.

Filter	CFU / liter	LOG	LOG reduction
Influent	4,40E+10	10.64	
Shower head 1	<10	<1	>9
Shower head 2	3,00E+01	1,48	>9
Shower head 3	<10	<1	>9
Shower head 4	<10	<1	>9

Management Summary

Legionella pneumophila removal of E.A.M Benelux shower module

General

Four filter modules of E.A.M. Benelux, the coded shower head 1 to 4, were tested under test conditions which based on the ASTM F838-5 at Vitens Laboratories, Leeuwarden, The Netherlands. Tests performed on July 30th, 2018; to determine the LOG reduction of the filter module for the bacteria *Legionella pneumophila*. The same filters used in the analysis conducted on January 29th, February 28th, March 30th, April 30th and June 28th, 2018.

Used methods

First the filter module was flushed with 1 L filtered tap water, followed by a challenge of 1 L water with a minimum concentration of $1,0 \times 10^9$ *Legionella pneumophila* (serotype 9) per liter. An effluent sample was taken at the end of the challenge. The feed and effluent sample taken from the challenge test were analyzed by Vitens Laboratories, Leeuwarden, The Netherlands. Analysis of the samples was conducted within 24 hours after the testing. Detection and enumeration of the *Legionella pneumophila* (serotype 9) was done according to NEN 6265:2007.

Test results

The table below displays the results of the *Legionella pneumophila* challenge experiments, using the data from the analytical report of Vitens.

Filter	CFU / liter	LOG	LOG reduction
Influent	1,51E+10	10.18	
Shower head 1	<10	<1	>9
Shower head 2	5,00E+01	1,70	8,5
Shower head 3	<10	<1	>9
Shower head 4	<10	<1	>9

Management Summary

Legionella pneumophila removal of E.A.M Benelux B.V shower module

General

Four filter modules of E.A.M. Benelux B.V, coded shower head 1 to 4, were tested under test conditions which are based on the ASTM F838-5 at Vitens Laboratories, Leeuwarden, The Netherlands. Tests were performed on 29 January 2019; in order determine the LOG reduction of the filter module for the bacteria *Legionella pneumophila*. The same filters were used in test performed on 29 January, 28 February, 30 March, 30 April and 30 July 2018

Used methods

First the filter module was flushed with 1 L filtered tap water, followed by a challenge of 1 L water with a minimum concentration of $1,0 \times 10^9$ *Legionella pneumophila* (serotype 9) per liter. An effluent sample was taken at the end of the challenge. The feed and effluent sample taken from the challenge test were analyzed by Vitens Laboratories, Leeuwarden, The Netherlands. Analysis of the samples was conducted within 24 hours after the testing. Detection and enumeration of the *Legionella pneumophila* (serotype 9) was done according to NEN-EN-ISO 11731:2017

Test results

The table below displays the results of the *Legionella pneumophila* challenge experiments, using the data from the analytical report of Vitens.

Filter	CFU / liter	LOG	LOG reduction
Influent	1,79E+10	10.25	
Shower head 1	<10	<1	>9
Shower head 2	4,00E+01	1,60	8,7
Shower head 3	<10	<1	>9
Shower head 4	<10	<1	>9

Opdrachtnr V180739192

Versie 1

Rapportage datum 11-02-2019

Opdrachtgever	Adres	Woonplaats	Afdeling/subklant	Project	Klantreferentie
E.A.M. Benelux	Jan Rijksestraat 41	1335 NN ALMERE	E.A.M. Benelux	E.A.M. Benelux Ad-hoc Project	

Monsternr.	Adres	Monsterpunt	Klantkenmerk	Matrix	Methode	Erkend	Monstern. door
V1807108101		Influent		Drinkwater	Klant		Klant
V1807108102		Douchekop 1		Drinkwater	Klant		Klant
V1807108103		Douchekop 2		Drinkwater	Klant		Klant
V1807108104		Douchekop 3		Drinkwater	Klant		Klant
V1807108105		Douchekop 4		Drinkwater	Klant		Klant

Monsternummer	V1807108101	V1807108102	V1807108103	V1807108104	V1807108105
Datum monsterneming	24-01-2019	24-01-2019	24-01-2019	24-01-2019	24-01-2019
Tijdstip monsterneming	10:00	10:00	10:00	10:00	10:00
Datum acceptatie	31-07-2018	31-07-2018	31-07-2018	31-07-2018	31-07-2018

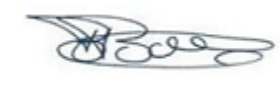
Test	Testomschrijving	Eenheid	Erkend	Methode			
Microbiologische Analyses							
1320	Legionella pneumophila retentietest	kve/l		18000000000	<10	<100	<10

De met 'Q' gemerkte verrichtingen zijn door de RvA geaccrediteerd. De met 'U' gemerkte analyse(s) zijn door een ander laboratorium uitgevoerd.

Op aanvraag is een lijst met specificaties van de toegepaste analyse- en bemonsteringsmethode(n) verkrijgbaar.

De datum en tijd van de start van de afzonderlijke analyses is zodanig gekozen dat deze binnen de gestelde termijn vallen, anders is het resultaat vergezeld van een disclaimer.

Dit rapport mag niet anders dan in zijn geheel worden gereproduceerd zonder schriftelijke toestemming van het laboratorium.



Dhr. B. Bolt
Manager Laboratorium

De onderzoeksresultaten hebben uitsluitend betrekking op de beproefde monsters.

Voor meer informatie over de meest voorkomende parameters, zie:
<https://www.vitens.nl/over-water/begrippenlijst>

Opdrachtnr V180736633

Versie 1

Rapportage datum 10-08-2018

Opdrachtgever	Adres	Woonplaats	Afdeling/subklant	Project	Klantreferentie
E.A.M. Benelux	Jan Rijksenstraat 41	1335 NN ALMERE	E.A.M. Benelux	E.A.M. Benelux Ad-hoc Project	

Monsternr.	Adres	Monsterpunt	Klantkenmerk	Matrix	Methode	Erkend	Monstern. door
V1807101003		Influent		Drinkwater	Klant		Klant
V1807101004		Douchekop 1		Drinkwater	Klant		Klant
V1807101005		Douchekop 2		Drinkwater	Klant		Klant
V1807101006		Douchekop 3		Drinkwater	Klant		Klant
V1807101007		Douchekop 4		Drinkwater	Klant		Klant

Monsternummer	V1807101003	V1807101004	V1807101005	V1807101006	V1807101007
Datum monsterneming	30-03-2018	30-03-2018	30-03-2018	30-03-2018	30-03-2018
Tijdstip monsterneming	10:00	10:00	10:00	10:00	10:00
Datum acceptatie	17-07-2018	17-07-2018	17-07-2018	17-07-2018	17-07-2018

Test	Testomschrijving	Eenheid	Erkend	Methode			
Microbiologische Analyses							
1320	Legionella pneumophila retentietest	kve/l	15000000000	<100	<10	<10	<10

Opdrachtnr V180739191

Versie 1

Rapportage datum 10-08-2018

Opdrachtgever	Adres	Woonplaats	Afdeling/subklant	Project	Klantreferentie
E.A.M. Benelux	Jan Rijksenstraat 41	1335 NN ALMERE	E.A.M. Benelux	E.A.M. Benelux Ad-hoc Project	

Monsternr.	Adres	Monsterpunt	Klantkenmerk	Matrix	Methode	Erkend	Monstern. door
V1807108096		Influent		Drinkwater	Klant		Klant
V1807108097		Douchekop 1		Drinkwater	Klant		Klant
V1807108098		Douchekop 2		Drinkwater	Klant		Klant
V1807108099		Douchekop 3		Drinkwater	Klant		Klant
V1807108100		Douchekop 4		Drinkwater	Klant		Klant

Monsternummer	V1807108096	V1807108097	V1807108098	V1807108099	V1807108100
Datum monsterneming	30-07-2018	30-07-2018	30-07-2018	30-07-2018	30-07-2018
Tijdstip monsterneming	10:00	10:00	10:00	10:00	10:00
Datum acceptatie	31-07-2018	31-07-2018	31-07-2018	31-07-2018	31-07-2018

Test	Testomschrijving	Eenheid	Erkend	Methode			
Microbiologische Analyses							
1320	Legionella pneumophila retentietest	kve/l		15000000000	<10	<100	<10

